

## ABSTRACT OF THE DISCLOSURE

One or more embodiments of the invention comprises a collection of techniques to infer the real construction of a collection of graphical elements.

Typically the underlying graphical elements of a physical object have a parent-child  
5 relationship in the graphical display and picking database. The invention examines the children of a parent seeking relationships like co-linear, closed polygon, etc., and then answers "hit" detect queries for areas that are not specifically stroked, but are also inferred to be "real", e.g., spaces in a dashed or patterned line, the area of a closed polygon, etc. Certain allowances and flexibility must be taken into account in this  
10 process. For example, one or more embodiments do not include "text" children on a stroke by stroke basis, but instead may look to the bounding box of the text for selection. One or more embodiments of the invention obtain a selection request from the user. The system and method of the invention examines existing objects to determine and obtain relationships between the objects. Virtual objects that join the  
15 existing objects or are complimentary to the existing objects are created based on the relationships. Subsequently, whenever an object is selected (whether the object is an existing object or a virtual object), the object selected and its related objects are selected. In this manner, the physical shape of a graphically represented object may be inferred and utilized by a graphics program and users.

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